

## Size Transformation

Given a size transformation with magnitude  $K$ , the following holds true:

$$\textcircled{1} \begin{array}{ccc} (x, y) & \longrightarrow & (Kx, Ky) \\ \text{Pre-Image} & & \text{Image} \end{array}$$

$$\textcircled{2} \text{ length of Image} = K \cdot \text{length of P-I}$$

OR

$$K = \frac{\text{length of Image}}{\text{length of P-I}}$$

$$\textcircled{3} \text{ Perimeter of Image} = K \cdot \text{Perimeter of P-I}$$

OR

$$K = \frac{\text{Perimeter of Image}}{\text{Perimeter of P-I}}$$

$$\textcircled{4} \text{ Area of Image} = k^2 \cdot \text{Area of P-I}$$

$$\text{OR} \\ \text{Area of P-I} = \frac{\text{Area of Image}}{k^2}$$

$$\textcircled{5} \text{ Volume of Image} = k^3 \cdot \text{Volume of P-I}$$

OR

$$\text{Volume of P-I} = \frac{\text{Volume of Image}}{k^3}$$

